

Dr. Sapana Kushwaha

Designation

Assistant Professor, Department of Pharmacology & Toxicology, NIPER-Raebareli, Lucknow, INDIA

Contact and Email ID

7524933450; sapna.pharm@gmail.com

Area of Specialization

Genotoxicity, Reproductive toxicity, Skeletal Muscle Biology, Experimental Liver Fibrosis, Metabolic disorders, Sarcopenia

Academic Qualifications

Examination	University/Board/Institute	Year
Ph.D. (Pharmacology)	National Institute of Pharmaceutical Education and Research(NIPER),INDIA	2015
M.S. (Pharm.) (Regulatory Toxicology)	National Institute of Pharmaceutical Education and Research(NIPER),INDIA	2009
B. Pharm.	Babu Banarasi Das University, Lucknow, INDIA	2007

Professional Experience

Teaching Experience: 2017-2021 (Assistant Professor, Babasaheb Bhimrao Ambedkar University, Lucknow, INDIA.

Post-Doctoral Research Experience: 2015-2017, CSIR-Nehru Postdoctoral Fellow at CSIR-Central Drug Research Institute (CSIR-CDRI), Lucknow, INDIA.

Research Grant(s)

S.N	Title of Project(s)	Funding Agency	Duration	Total grant	Role
1.	Mechanistic study of skeletal muscle loss in diabetic rat: Pharmacological/Nutraceutical Intervention(s)	UGC	2 years (2019-2021)	10 Lakhs	PI
2.	Identifying the potential role of Angiotensin Receptor Blockers in sarcopenia of aging and disuse muscle atrophy	SERB	2 years (2019-2021)	30 Lakhs	PI

Patents

- Title:** Combination Of Clofazimine And Imatinib For Effective Therapy Of Drug-Resistant Myeloid Leukemia, **Contributors:** S. Sanyal , H. Kumar , N. Chattopadhyay , R. Ramachandran , A.K. Trivedi , S. Shree , A. A. Gurjar, S. Chattopadhyay , **S. Kushwaha**, A.K. Singh , S. Dubey , K. Lata, R. Mohammed , J.R. Gayen , A.K. Tripathi, **Patent Number:** US patent no. 0140NF2017 granted on 3march 2020. **Institute:** Central Drug Research Institute (CDRI), INDIA,
- Title:** Treatment and cure of chronic myelogenous leukemia via modulation of PPARy activity by clofazimine. **Contributors:** S. Sanyal , H. Kumar , N. Chattopadhyay , R. Ramachandran , A.K. Trivedi , S. Shree , A. A. Gurjar, S. Chattopadhyay , **S. Kushwaha** , A.K. Singh , S. Dubey , K. Lata, R. Mohammed , J.R. Gayen , A.K. Tripathi, Indian Patent, **Institute:** Central Drug Research Institute (CDRI), INDIA, Filed on July 2017
- Title:** Bioactive extract, fraction and formulation of Cassia occidentalis for bone regeneration and the prevention or treatment of glucocorticoid-induced musculo-skeletal diseases. **Contributors:** N. Chattopadhyay, S. Sanyal , S. Pal, R. Maurya, P. Mishra, A.K. Trivedi, S. K. Rath, Sudhir Sinha, Padam Kumar, Satish Tiwari, Athar Husain, A. A.

- Gurjar, **S. Kushwaha** , K. Lata, R. Mohammed , J.R. Gayen , A.K. Tripathi **Patent Number:** Indian Application No. 201811021504 , **Institute:** Central Drug Research Institute (CDRI), INDIA,
4. **Title:** Bioactive extract, fraction of cassia occidentalis and formulation thereof for bone regeneration **Contributors:** N. Chattopadhyay, S. Sanyal , S. Pal, R. Maurya, P. Mishra, A.K. Trivedi, S. K. Rath, Sudhir Sinha, Padam Kumar, Satish Tiwari, Athar Husain, A. A. Gurjar, **S. Kushwaha** , K. Lata, R. Mohammed , J.R. Gayen , A.K. Tripathi **Application Number:** 16/434323 (US Patent), **Institute:** Central Drug Research Institute (CDRI), INDIA.

Position held in previous Organization

- Member of Departmental Research Committee
- Member of Internal Quality Assurance Committee
- Member of Gender Parity and Cultural Committee
- Member of Coordination Committee for Ph.D. Admission
- Member of Remedial Classes Committee imparting quality education to the students from weaker section of society
- Editor for BBAU Journal “International Journal of Social International Journal of Science Technology”

Conferences, Seminar and Presented lectures

- Conferences: 15 (2-International, 13-National)
- Conference Proceedings: 01
- Paper Presentations: 02
- Poster Presentations: 13

Awards/Honors/Achievements/Recognitions

- Annual Incentive and certificate award to inventors for US patent no. 0140NF2017 entitled “Combination of clofazimine and imatinib for effective therapy of myeloid leukemia” on occasion of 70th Annual Day celebrations of CSIR-CDRI, 2021.
- Incentive award for excellence in Research publications 2021 for paper entitled “Leprosy drug clofazimine activates peroxisome proliferator-activated receptor- γ and synergizes with imatinib to inhibit chronic myeloid leukemia cells” on occasion of 70th Annual Day celebrations of CSIR-CDRI, 2021.
- Received **IUTOX Travel Award, 2020** to attend Society of Toxicology (SOT), 59th Annual Meeting and ToxExpo, USA (15 March, 2020 to 19 March, 2020) by International Union of Toxicology (IUTOX).
- Received **International Travel Support** (ITS/2020/000023) grant by Science and Engineering Research Board (SERB), Govt. of India to attend SOT 59th Annual Meeting and ToxExpo , USA (15 March, 2020 to 19 March, 2020). *(Couldn't avail due to COVID19 Pandemic)*
- Awarded prestigious Indian **CSIR-Nehru post-doctoral fellowship** in year 2014.
- Published interview as a recipient of “**International Toxicologist Travel Award Winner**” 2014 in Association of Scientists of Indian Origin (ASIO)—SOT Aug 2014 newsletter.
- Received **Association of Scientists of Indian Origin (ASIO) 2014 International Toxicologist Travel Award**. This award constitutes a plaque and a monetary award for attending 5^{3rd} SOT meeting, Arizona, USA.
- Received “**Graduate Student Travel Award**” by Society of Toxicology (SOT), USA to attend 53rd SOT meeting, Arizona, USA, 2014. This award constitutes a monetary award.
- Received **International Travel Support (ITS)** grant by Department of Science and Technology (DST), Ministry of Science and Technology, Govt. of India (SB/ITS-Y/04949/2013-2014).
- Awarded **Senior Research Fellowship (SRF)** by Council of Scientific & Industrial Research (CSIR), India for completion of Ph.D. (2012-2013)
- Received **Senior Research Fellowship (SRF)** by Department of Science & Technology (DST) for project entitled as “Influence of Hyperglycemia (Diabetes mellitus) on the Toxicity of Selected Antihypertensive Drugs: Intervention of Protective Agents” (Dec 2009-2011).
- Awarded **Women Scientists Scholarship**, by Technology Information, Forecasting and Assessment Council (TIFAC under Department of Science & Technology) in year 2009. *(Not availed)*

Cited Work

Research paper 'Evaluation of multi-organ DNA damage by comet assay from 28 days repeated dose oral toxicity test in mice: A practical approach for test integration in regulatory toxicity testing' **S. Kushwaha**, D. N. Tripathi, A. Vikram, P. Ramarao and G.B. Jena. (2010) **Regulatory Toxicology and Pharmacology**, 58,145-154 has been cited for "OECD Guideline for The Testing of Chemicals, *In vivo* Mammalian alkaline comet assay and Rodent alkaline single cell gel electrophoresis (Comet) assay (***In vivo* Mammalian alkaline comet assay OECD GUIDELINE 489**).

Certification Courses/Training/Workshop attended

- Attended and received the certificate for two days yoga workshop on self management of excessive stress (SMET- 2019).
- Participated as active member in International Women's Day Symposium held in BBAU, Lucknow, India 2019
- Participated as delegate in Women Scientists and Entrepreneurs Conclave (WSE) conducted by India International Science Festival(IISF), Luck now, India 2018
- Attended certified course on one month orientation programme organised by University Grants Commission, India (20 Oct 2018-22 Nov. 2018).
- Attended certified course on one week faculty development programme organised by Ambedkar University, India (5 Jan 2018-17 Jan 2018).
- Completed DL-101, "General Course on Intellectual Property" from WIPO Worldwide Academy Geneva, 2009

Research Publications

1. Deepika Gautam, Samipta Singh, Priyanka Maurya, Manjari Singh, **Kushwaha S** and Shubhini Awasthi Saraf, " Appraisal of Nano-lipidic Astaxanthin cum Thermoreversible Gel and its Efficacy in Haloperidol induced Parkinsonism", **Current Drug Delivery**, 2021 May 10.
2. Pal S, Mittapelly N, Husain A, **Kushwaha S**, Chattopadhyay S, Kumar P, Ramakrishna E, Kumar S, Maurya R, Sanyal S, Gayen JR, Mishra PR, Chattopadhyay N, "A butanolic fraction from the standardized stem extract of *Cassia occidentalis* L delivered by a self-emulsifying drug delivery system protects rats from glucocorticoid-induced osteopenia and muscle atrophy", **Scientific Reports**, 2020 Jan 13;10(1):195.
3. Kumar H, Chattopadhyay S, Das N, Shree S, Patel D, Mohapatra J, Gurjar A, **Kushwaha S**, Singh AK, Dubey S, Lata K, Kushwaha R, Mohammed R, Dastidar KG, Yadav N, Vishwakarma AL, Gayen JR, Bandyopadhyay S, Chatterjee A, Jain MR, Tripathi AK, Trivedi AK, Chattopadhyay N, Ramachandran R, Sanyal S, "Leprosy drug clofazimine activates peroxisome proliferator-activated receptor- γ and synergizes with imatinib to inhibit chronic myeloid leukemia cells", **Haematologica**, 2020 Apr;105(4):971-986.
4. Gurjar AA[†], **Kushwaha S[†]**, Chattopadhyay S[†], Das N[†], Pal S, China SP, Kumar H, Trivedi AK, Guha R, Chattopadhyay N, Sanyal S, "Long acting GLP-1 analog liraglutide ameliorates skeletal muscle atrophy in rodents", **Metabolism**, 2020 Feb;103:154044.([†] Equal authorship)
5. Singh AK, Shree S, Chattopadhyay S, Kumar S, Gurjar A, **Kushwaha S**, Kumar H, Trivedi AK, Chattopadhyay N, Maurya R, Ramachandran R, Sanyal S, "Small molecule adiponectin receptor agonist GTDF protects against skeletal muscle atrophy", **Molecular and Cellular Endocrinology**, 2017 Jan 5;439:273-285.
6. China SP, Pal S, Chattopadhyay S, Porwal K, **Kushwaha S**, Bhattacharyya S, Mittal M, Gurjar AA, Barbhuyan T, Singh AK, Trivedi AK, Gayen JR, Sanyal S, Chattopadhyay N, "Globular adiponectin reverses osteo-sarcopenia and altered body composition in ovariectomized rats", **Bone**, 2017 Dec;105:75-86.
7. Yadav M, Singh AK, Kumar H, Rao G, Chakravarti B, Gurjar A, Dogra S, **Kushwaha S**, Vishwakarma AL, Yadav PN, Datta D, Tripathi AK, Chattopadhyay N, Trivedi AK, Sanyal S, "Epidermal growth factor receptor inhibitor cancer drug gefitinib modulates cell growth and differentiation of acute myeloid leukemia cells via histamine receptors", **Biochimica et. Biophysica Acta**, 2016 Oct;1860(10):2178-90.

8. Namuju RC, Khan S, Patel RS, Shera FY, Trivedi PP, **Kushwaha S**, Jena GB, "Pre-pubertal exposure of cytarabine-induced testicular atrophy, impaired spermatogenesis and germ cell DNA damage in SD rats", **Toxicology Mechanism and Methods**, 2014; Dec;24(9):703-12.
9. Shekh K, Khan S, Jena G, Kansara BR, **Kushwaha S**, "3-Aminobenzamide--a PARP inhibitor enhances the sensitivity of peripheral blood micronucleus and comet assays in mice", **Toxicology Mechanism and Methods**, 2014;Jun;24(5):332-41.
10. **Kushwaha S**, Jena GB, "Effects of nicotine on the testicular toxicity of streptozotocin-induced diabetic rat: intervention of enalapril", **Human and Experimental Toxicology**, 2014; Jun;33(6):609-22.
11. **S. Kushwaha** and G.B. Jena, "Telmisartan ameliorates the germ cell toxicity in STZ-induced diabetic rat: Studies on possible molecular mechanisms", **Mutation Research**, 2013; 755,11-23.
12. Ramanjaneyulu SV, Trivedi PP, **Kushwaha S**, Vikram A, Jena GB, "Protective role of atorvastatin against doxorubicin-induced cardiotoxicity and testicular toxicity in mice", **Journal of Physiology and Biochemistry**, 2013; Sep;69(3):513-25.
13. **S. Kushwaha** and G.B. Jena, "Enalapril Reduces Germ Cell Toxicity in Streptozotocin-Induced Diabetic Rat: Investigation on Possible Mechanisms", **Naunyn Schmiedeberg's Archive of pharmacology**, 2012; 385, 111-124.
14. **S. Kushwaha**, A. Vikram and G.B. Jena, "Protective effects of enalapril in streptozotocin-induced diabetic rat: Studies with DNA damage, apoptosis and expression of CCN2 in the heart, kidney and liver", **Journal of Applied Toxicology**, 2012; 32, 662-672.
15. **S. Kushwaha**, A. Vikram, P.P. Trivedi and G.B. Jena, "Alkaline, Endo-III and FPG modified comet assay as biomarkers for the detection of oxidative DNA damage in rats with experimentally induced diabetes", **Mutation Research**, 2011; 726, 242-250.
16. Trivedi PP, **Kushwaha S**, Tripathi DN, Jena GB, "Cardioprotective effects of hesperetin against doxorubicin-induced oxidative stress and DNA damage in rat", **Cardiovascular Toxicology**, 2011;Sep;11(3):215-25.
17. Mughal A, Vikram A, **Kushwaha S**, Jena GB, "Simultaneous use of erythropoietin and prior bleeding enhances the sensitivity of the peripheral blood micronucleus assay", **Mutagenesis**, 2011; Mar;26(2):331-8.
18. Vikram A, **Kushwaha S**, Jena GB, "Relative influence of testosterone and insulin in the regulation of prostatic cell proliferation and growth", **Steroids**, 2011; Mar;76(4):416-23.
19. S. Khan, T. Ahmed, C. Parekh, P.P. Trivedi, **S. Kushwaha** and G.B. Jena, "Investigation on Sodium valproate induced germ cell damage, oxidative stress and genotoxicity in male Swiss mice", **Reproductive Toxicology**, 2011; 32, 385-94.
20. **S. Kushwaha**, D. N. Tripathi, A. Vikram, P. Ramarao and G.B. Jena, "Evaluation of multi-organ DNA damage by comet assay from 28 days repeated dose oral toxicity test in mice: A practical approach for test integration in regulatory toxicity testing", **Regulatory Toxicology and Pharmacology**, 2010; 58,145-154.
21. Trivedi PP, **Kushwaha S**, Tripathi DN, Jena GB, "Evaluation of male germ cell toxicity in rats: correlation between sperm head morphology and sperm comet assay", **Mutation Research**, 2010 Dec 21;703(2):115-21.

Memberships of the Professional Bodies

- Associate Member, Society of Toxicology (SOT), USA
- Associate Member, Society on Sarcopenia, Cachexia and Wasting Disorders, Germany
- Life Time Membership, Society of Toxicology (STOX), INDIA
- Life Time Membership, Indian Pharmacological Society (IPS), INDIA



Place: NIPER, LUCKNOW

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